SCHUNK ®

Product Information

Universal rotary unit ERS

Compact. Flexible. Fast.

ERS Universal rotary unit

Electrical rotary unit with torque motor and angle of rotation > 360° as well as the pneumatic holding brake and rotary feed-through options, and if desired increased protection class (IP54).

Field of application

All-purpose, highly flexible rotary unit for applications with extraordinary demands on the load moment of inertia, compactness and reliability. Suitable for clean and slightly contaminated environments as a component of positioning systems.
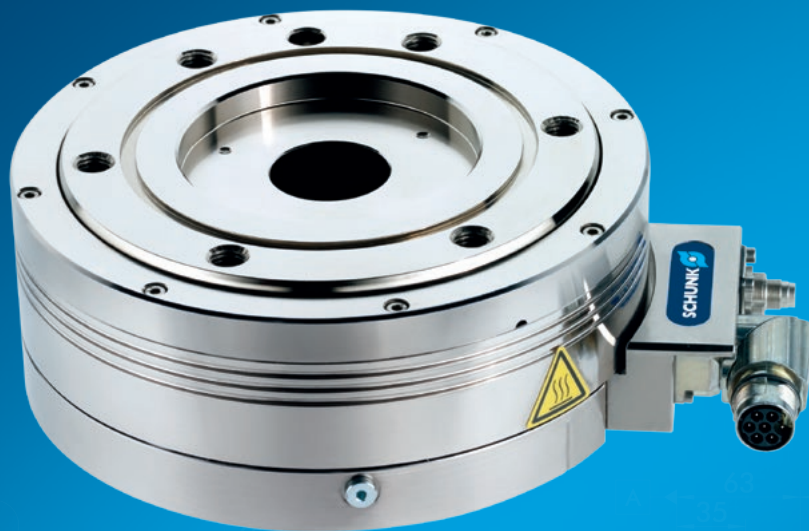
Advantages – Your benefits

Integrated torque drive for high torque and flexible use by controlled position, velocity and torque

Large center bore for feeding through lines and media hoses

Compact design for minimal interfering contours and for use in confined spaces

Easy system integration by standard encoder interface (TTL or Sin/Cos)

Versatile actuation options for easy integration into existing control concepts via an external SCHUNK ECM drive controller or an external standard controller (e.g. BOSCH Rexroth IndraDrive or SIEMENS Sinamics)

Optional pneumatic holding brake for maintaining the position in downtime

| Sizes Quantity: 3 | Weight 2.7 .. 10.9 kg | Torque 2.5 .. 10 Nm | Repeat accuracy 0.01 .. 0.04° | Angle of rotation > 360° |

Functional description

The ERS is based on a permanent magnet torque motor with a hollow shaft for media feed-through. Bearing is ensured via four point bearing, which is designed for high maximum moments.
The ERS is available in the motor versions 48 V and 560 V.

Alternatively, the ERS is equipped with a pneumatically actuated holding brake. On option it can be also equipped with a rotary feed-through, which supplies the assembly with compressed air or electric signals for infinite rotational movements.

① **Base support stator**
for appropriate stability even at higher torques

② **Stator**
with windings

③ **External rotor with center bore**
for cable feed-through

④ **Pneumatic holding brake**
for maintaining the position in downtime

⑤ **Electrical coupling flange with plug connectors**
for connection of power and encoder cable

⑥ **Micro valve**
for the pneumatic brake option

CAD data, operating manuals and other current product documents can be found online.

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Detailed functional description

Centering the structure

The ERS electrical rotary module is suitable for applications with high demands when it comes to axial and radial run-out. For adaptation and correct approval of the run-out, there is one centering diameter in the basic version and the version with rotary feed-through. This can be seen in the main view. The structure can be prevented from over-rotating using an alignment pin.

1 ERS in basic version

2 Screw connection

3 Alignment pin

4 Centering groove

Variant with pneumatic holding brake

The holding brake is pneumatically actuated. When not actuated, the holding brake is activated. The brake is controlled using two micro valves, which in turn can be controlled using the respective driver regulator. The micro valves are included in the scope of delivery.

1 MV micro valves

2 Brake piston

3 Internal hosing

Variant with integrated rotary feed-through for electrical signals and compressed air

The optional rotary feed-through of the ERS provides the opportunity to lead eight electrical signals and a compressed air supply through the module. The electrical connection is achieved through eight 3-pin M8 connectors on the drive and output flange. The compressed air supply can be removed either via a side disposal or a hose-free direct connection.

1 ERS rotary module with DDF

2 MV micro valves

3 PGN-plus 2-finger parallel gripper

Flexible choice of drive controller

Due to the two motor variants 48V and 560V, as well as the encoder interfaces TTL and 1Vss of the integrated incremental measuring system, the ERS can be combined flexibly with various drive controllers. The connection takes place via two standardized plug connectors, separated for power and encoder cable. The parameters for the drive controllers shown are included on DVD.

1 ERS with 48V motor

2 SCHUNK ECM Drive controller

3 ERS with 560V motor

4 BOSCH Rexroth IndraDrive Cs Drive controller

5 SIEMENS Sinamics S120 Drive controller

6 SIEMENS SME sensor module

Sample order

ERS – 210 – 560 – 40 – B – N – I

Size

ERS 135
ERS 170
ERS 210

Voltage

Rated motor voltage = 560 V
Rated motor voltage = 48 V

IP protection class

IP = 40
IP = 54

Pneumatic holding brake

N = without pneumatic holding brake
B = with pneumatic holding brake

Rotary feed-through

N = without rotary feed-through
D = with rotary feed-through

Encoder system

I = incremental

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ERS

Universal rotary unit

General notes about the series

Housing material: Aluminum alloy, coated

Drive: Torque motor, 3-phase

Stroke measuring system: Contactless, magnetic measuring system in incremental version, with the interfaces TTL (48V) or 1Vss (560V)

Drive controller: SCHUNK ECM (48V), BOSCH Rexroth IndraDrive (560V) or SIEMENS Sinamics (560V) controllers supported as standard; matching parameters supplied on DVD, other manufacturers available on request.

Scope of Delivery: Accessories with centering pins, assembly and operating manual with installation declaration of incorporation, DVD commissioning for SCHUNK motors; for the holding brake option, two micro valves are supplied for actuating the brake

Warranty: 24 months

Swiveling times: The swiveling times are purely the times when the module moves from rest position to rest position. Delays caused by the PLC or the drive controller are not included and to be taken into consideration when determining cycle times. Load-dependent rest periods may have to be included in the cycle time.

Layout or control calculation: Verifying the sizing of the selected unit is necessary, since otherwise overloading can result. Please contact us for assistance.

Repeat accuracy: The repeat accuracy is defined as the spread of the target position after 100 consecutive positioning cycles.

Ambient conditions: The modules are particularly designed for the use in clean to slightly contaminated ambient conditions. Please note that the life time of the modules can shorten if they are used in harsh ambient conditions, and that SCHUNK cannot assume liability in such cases.

Safety notes: Caution: Magnetic field! This particularly applies for persons with implanted medical devices, such as pacemakers, hearing aids, etc.

Nominal Currents: The rated currents can be permanently actuated. With regard to all the currents which are ranging above the nominal current up to the maximum current, the notes of the individual product documentation has to be respected.

Application example

Electrically driven high-speed gantry for palletizing and depalletizing and re-orientation of different and sensitive components.

❶ ERS universal rotary module

❷ WSG universal gripper

❸ LDT universal linear module

❹ LDM universal linear module

❺ LDN universal linear module
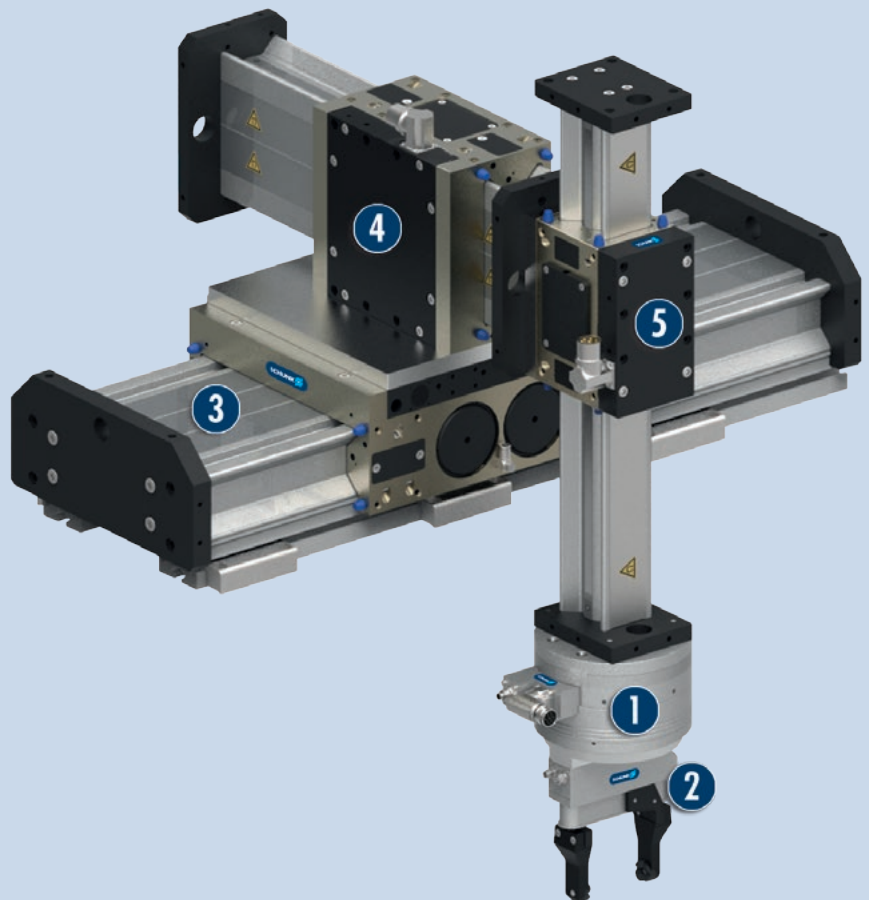
SCHUNK offers more ...

The following components make the product ERS even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.
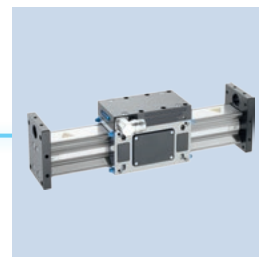
Gripper for small components

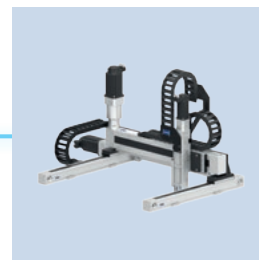Universal gripper

Long–stroke gripper

Linear axis

Drive controller (e.g. BOSCH Rexroth IndraDrive)

SCHUNK Drive controller

Micro valves

Room gantry

Power and encoder cables

ⓘ Additional information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49–7133–103–2696

## Options and special information

Using the pneumatic holding brake: The installed brake is only designed to be used as a holding brake. Consequently, it may only be actuated when stationary. Use as an operating brake is not permitted and significantly increases wear.
Cycle time design with pneumatic holding brake: The piston filling time with the pneumatically operated holding brake is between 100 and 200 ms depending on the size of the rotary module. This time is already saved in the standard parameter sets for the SCHUNK, SIEMENS and BOSCH controllers.
**Electric and pneumatic rotary feed–through:** The ERS with rotary feed–through may be operated with a max. speed of rotation of 250 rpm due to the integrated seals and the slip ring. The current load per signal line (pin 4 on the M8 connector) is 2 A. The collected power supply via pin 1 of the M8 connector may not exceed 4 A.
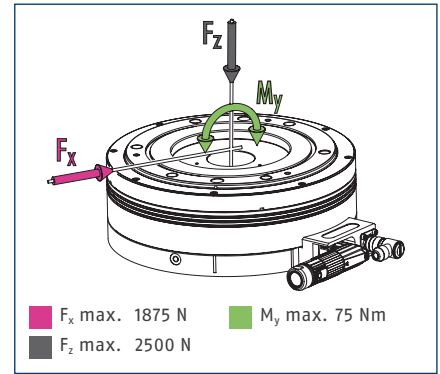
SCHUNK®

ERS 135

Universal rotary unit
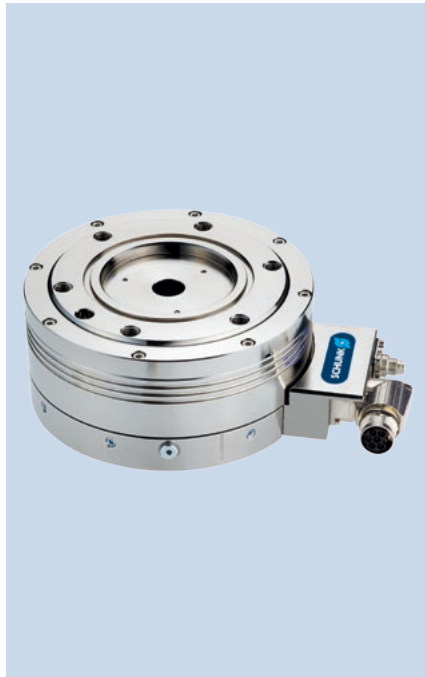
Swivel time diagram 560 V
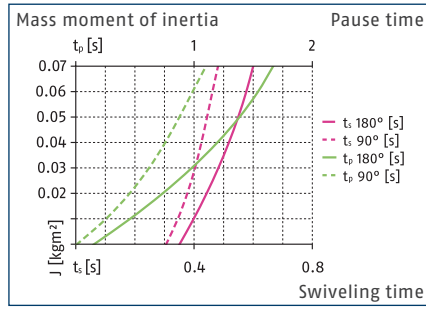
Swivel time diagram 48 V
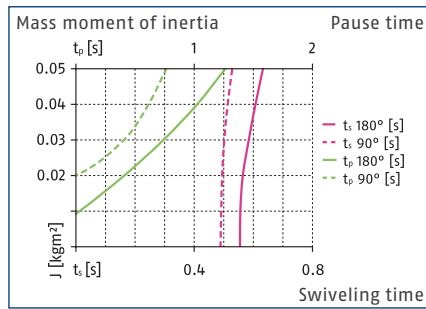
Forces and moments

Fx max. 1875 N	My max. 75 Nm
Fz max. 2500 N	

ⓘ Moments and forces may occur simultaneously.

Technical data

Description		ERS 135-048-40-N-N-I	ERS 135-560-40-N-N-I
ID		0310130	0310146
General operating data			
Rated/maximum torque	[Nm]	2.5/5.7	2.5/8
Nominal speed	[1/min]	320	1000
Max. RPM	[1/min]	510	2300
Max. permissible mass moment of inertia	[kgm²]	0.05	0.07
Repeat accuracy	[°]	0.04	0.01
Axial run-out/run-out accuracy	[mm]	0.03/0.03	0.03/0.03
Weight	[kg]	2.7	2.7
min./max. ambient temperature	[°C]	5/55	5/55
Protection class IP		40	40
Electrical operating data			
Intermediate circuit voltage	[V]	48	560
Rated/maximum current	[A]	4.2/13	1.2/3.8
Encoder system		Encoder (incremental)	Encoder (incremental)
Output signal		TTL 5V	Sin/Cos 1Vss
Options and their characteristics			
Version with holding brake		ERS 135-048-40-B-N-I	ERS 135-560-40-B-N-I
ID		0310134	0310150
moment holding brake	[Nm]	2.5	2.5

ⓘ All versions are also available with protection class IP 54 upon request.

ⓘ The diagram shows the shortest possible swiveling times with max. current. The indicated break times have to be strictly observed. Please contact us for assistance with the design of your case of application and optimization of the cycle time.
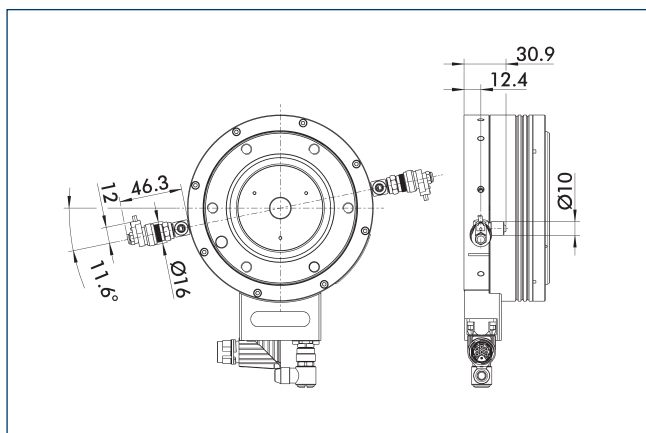
Main view
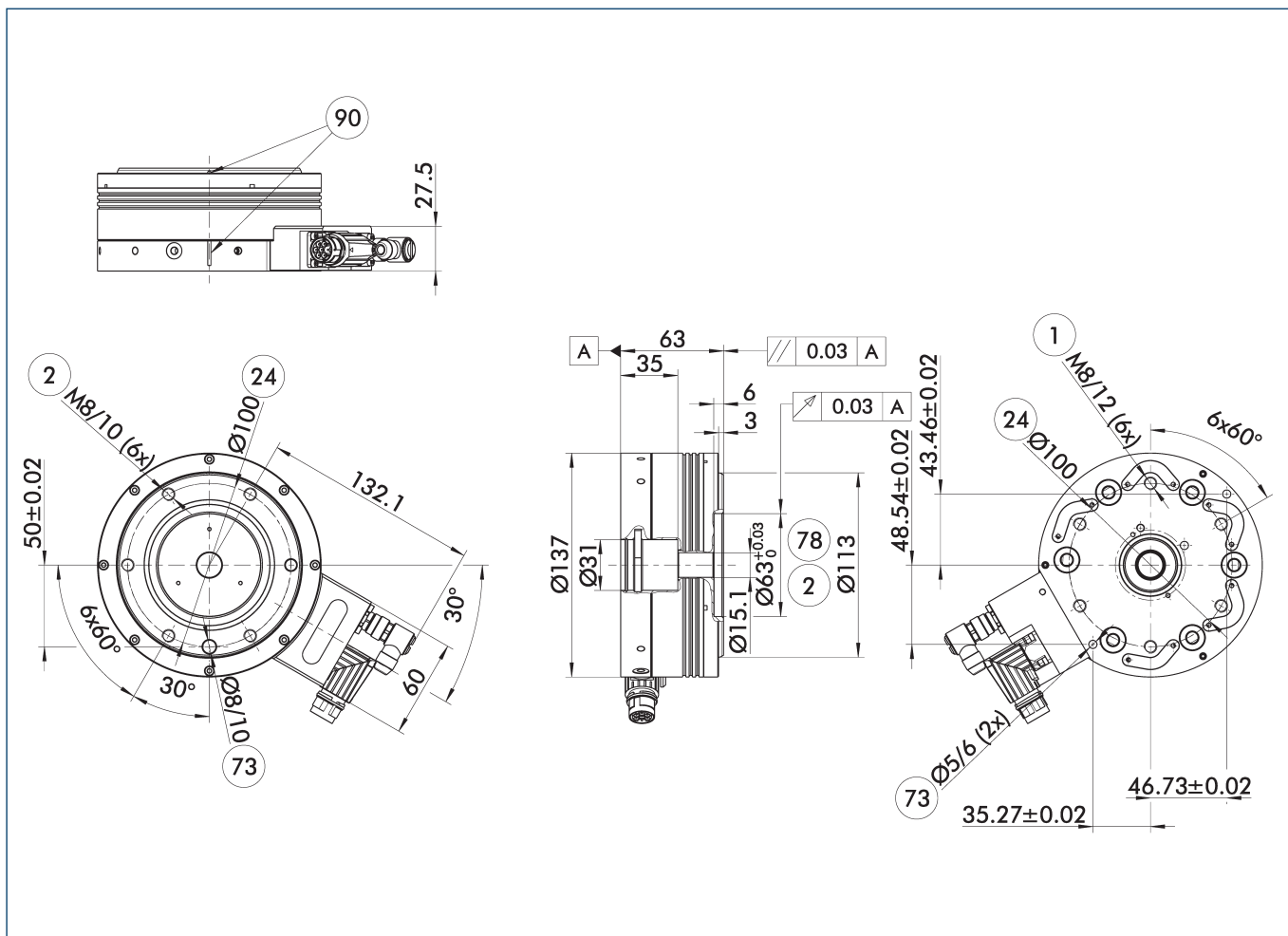
The drawing shows the basic version of the rotary unit without dimensional consideration of the options described below.
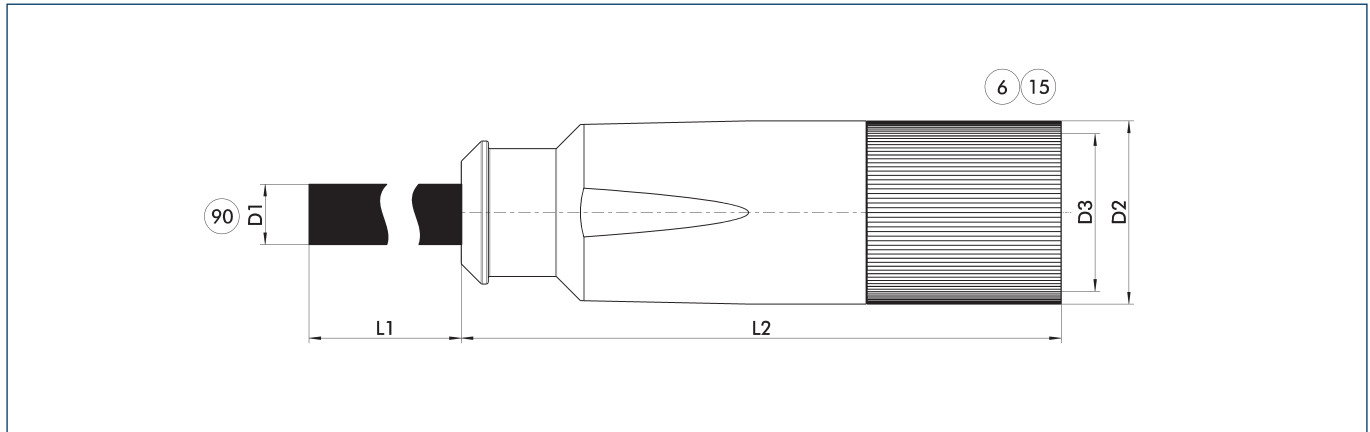
① Connection swivel unit
② Attachment connection
㉔ Bolt circle
㉝ Fit for centering pins
㉘ Fit for centering
⑨⓪ Zero pulse (encoder system)

View for rotary unit with pneumatic holding brake

In addition to the two micro valves, the brake version's scope of delivery includes connection cables and a Y–distributor.

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Power cable

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.
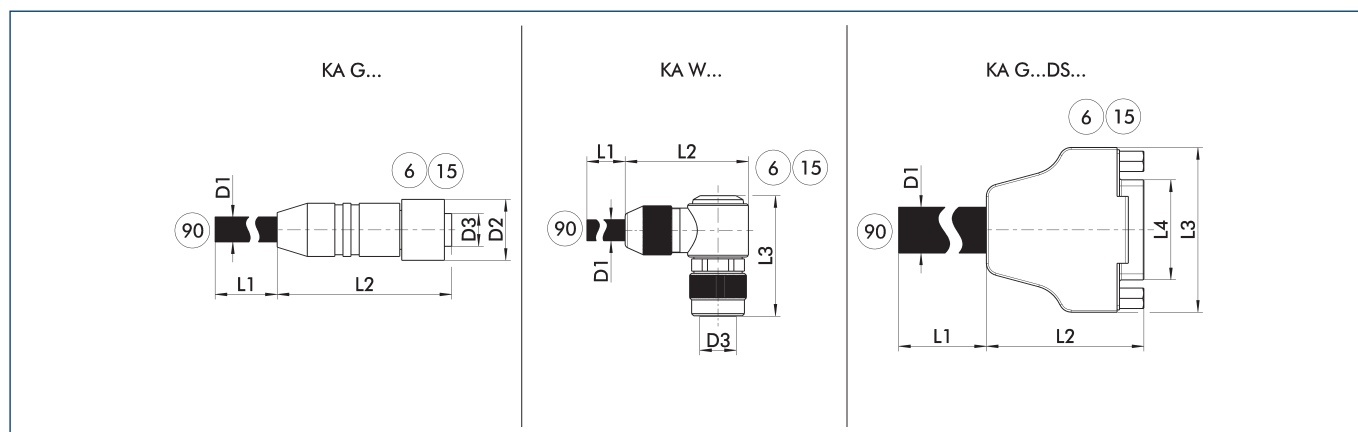
⑥ Connection module side

⑮ Socket

⑨⓪ Prefabricated to connect to the higher-level components

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Power cable for BOSCH Rexroth IndraDrive A/B and SCHUNK ECM – cable track-compatible						
KA GLT1706-LK-00500-B	0349861	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-B	0349862	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-B	0349863	15	8.5	71	21.2	M17
KA GLT1707-LK-02000-B	0349864	20	8.5	71	21.2	M17
Power cable for BOSCH Rexroth IndraDrive Cs – cable track-compatible						
KA GLT1706-LK-00500-C	0349882	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-C	0349883	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-C	0349884	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-C	0349885	20	8.5	71	21.2	M17
Power cable for SIEMENS Sinamics – cable track-compatible						
KA GGT1706-LK-00100-S	0349893	1	8.5	71	21.2	M17
KA GGT1706-LK-00200-S	0349894	2	8.5	71	21.2	M17
KA GGT1706-LK-00300-S	0349895	3	8.5	71	21.2	M17

ⓘ Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

Encoder cable

KA G...

KA W...

KA G...DS...

KA G...	encoder cable with straight plug
KA W...	encoder cable with angeled plug
KA G...DS...	Sub D encoder cable

⑥ Connection module side
⑮ Socket
⑨⓪ Prefabricated for connection to the drive controller

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.
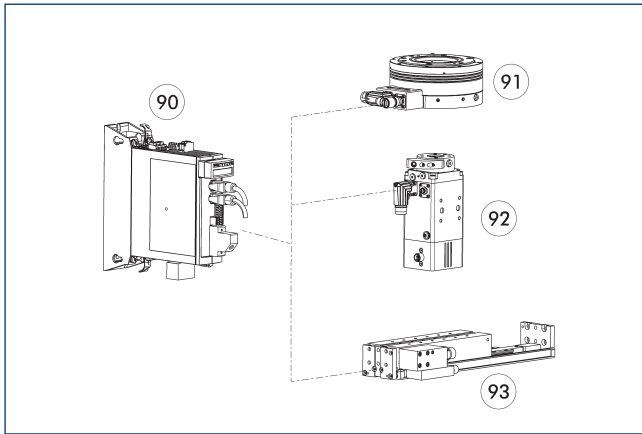
Description	ID	L1	D1	L2	L3	D3
		[m]	[mm]	[mm]	[mm]	
Encoder cable for BOSCH Rexroth IndraDrive A/B and SCHUNK ECM – cable track–compatible						
KA WWN0908-GK-00500-B	0349500	5	5.8	28.5	30	M9
KA WWN0908-GK-01000-B	0349501	10	5.8	28.5	30	M9
KA WWN0908-GK-01500-B	0349502	15	5.8	28.5	30	M9
KA WWN0908-GK-02000-B	0349503	20	5.8	28.5	30	M9
Encoder cable for BOSCH Rexroth IndraDrive Cs – cable track–compatible						
KA WWN0908-GK-00500-C	0349505	5	5.8	28.5	30	M9
KA WWN0908-GK-01000-C	0349506	10	5.8	28.5	30	M9
KA WWN0908-GK-01500-C	0349507	15	5.8	28.5	30	M9
KA WWN0908-GK-02000-C	0349508	20	5.8	28.5	30	M9
Encoder cable for SIEMENS Sinamics – cable track–compatible						
KA WGN0908-GK-00100-S	0349531	1	5.8	28.5	30	M9
KA WGN0908-GK-00200-S	0349532	2	5.8	28.5	30	M9
KA WGN0908-GK-00300-S	0349533	3	5.8	28.5	30	M9

ⓘ Please observe the min. bending radius for cable track–compatible cables or the max. torsion angle for torsion–compatible cables. These are generally 10 times the cable diameter or +/– 180º/m.

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BOSCH IndraDrive Cs Drive controller
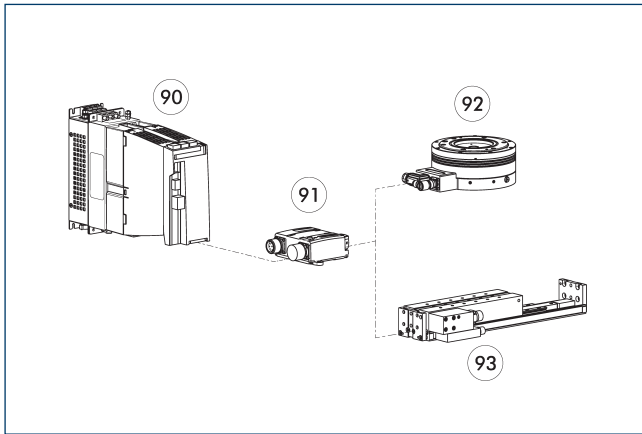

⑨⓪ Controller	⑨② ERD Rotary unit
⑨① ERS Rotary unit	⑨③ ELB Compact linear module

The drive controller can be used for the rotary units ERS 560V and ERD as well as for SCHUNK linear motor axes. It is available with the communication interfaces Profibus and Multi-Ethernet (Sercos III, Profinet, EtherCat, EthernetIP).

Description	Nominal current	Maximum current
	[A]	[A]
Controller		
HCS01.1E-W0008	2.7	8

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.
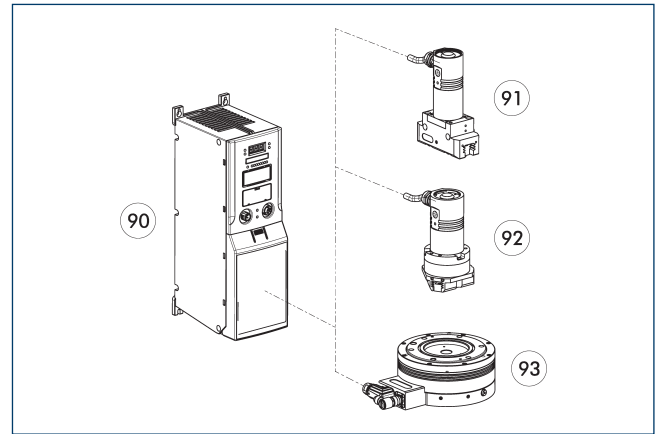
SIEMENS Sinamics Drive controller

⑨⓪ Controller	⑨② ERS Rotary unit
⑨① SIEMENS SME sensor module	⑨③ ELB Compact linear module

The drive controller can be used for the rotary unit ERS 560V as well as for SCHUNK linear motor axes. It is available with the communication interfaces Profibus and Profinet.

Description	Nominal current	Maximum current
	[A]	[A]
Controller		
Sinamics S120	1.7	3.4

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

SCHUNK ECM Drive controller

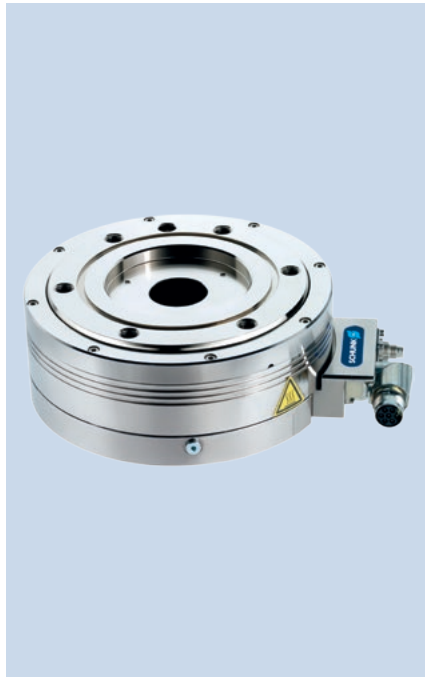|	
⑨⓪ Controller	⑨② EZN 3-finger centric gripper
⑨① EGN 2-finger parallel gripper	⑨③ ERS universal rotary module

The drive controller can be used for the rotary unit ERS 48V as well as for the grippers EGN and EZN. It is available with the communication interfaces Profibus and CAN-Bus.

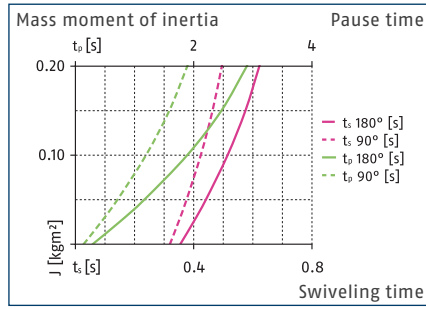| Description	Power supply (logic)	Power supply (load)
	[V]	[V]
Controller		
ECM - ERS 135	24	48

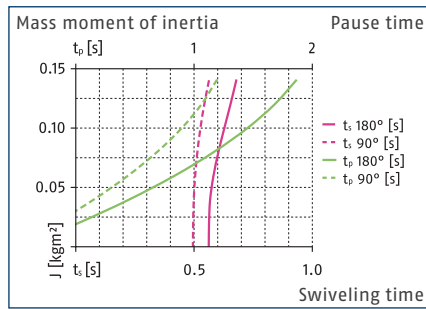ⓘ We will be happy to help you select the right controller. Please contact us for assistance.
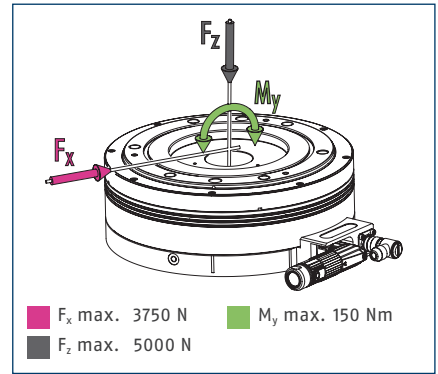
SCHUNK

ERS 170

Universal rotary unit

Swivel time diagram 560 V

Mass moment of inertia — Pause time

- t_s 180° [s]
- t_s 90° [s]
- t_p 180° [s]
- t_p 90° [s]

Swivel time diagram 48 V

Mass moment of inertia — Pause time

- t_s 180° [s]
- t_s 90° [s]
- t_p 180° [s]
- t_p 90° [s]

Forces and moments

F_x max. 3750 N		M_y max. 150 Nm
F_z max. 5000 N		

ⓘ Moments and forces may occur simultaneously.

Technical data

Description		ERS 170-048-40-N-N-I	ERS 170-560-40-N-N-I	ERS 170-048-40-N-D-I	ERS 170-560-40-N-D-I
ID		0310162	0310178	0310164	0310180
General operating data					
Rated/maximum torque	[Nm]	5/15	5/17	4.7/15	4.7/17
Nominal speed	[1/min]	250	700	250	250
Max. RPM	[1/min]	400	1600	250	250
Max. permissible mass moment of inertia	[kgm²]	0.14	0.2	0.14	0.2
Repeat accuracy	[°]	0.04	0.01	0.04	0.01
Axial run-out/run-out accuracy	[mm]	0.03/0.03	0.03/0.03	0.05/0.05	0.05/0.05
Weight	[kg]	4.2	4.2	6.3	6.3
min./max. ambient temperature	[°C]	5/55	5/55	5/55	5/55
Protection class IP		40	40	40	40
Electrical operating data					
Intermediate circuit voltage	[V]	48	560	48	560
Rated/maximum current	[A]	5.6/19	1.6/5.6	5.6/19	1.6/5.6
Encoder system		Encoder (incremental)	Encoder (incremental)	Encoder (incremental)	Encoder (incremental)
Output signal		TTL 5V	Sin/Cos 1Vss	TTL 5V	Sin/Cos 1Vss
Operating data of the rotary feed-through					
Number of pneumatic feed-throughs				1	1
max. operating pressure	[bar]			8	8
Number of electrical feed-throughs				8	8
Max. voltage DC	[V]			24	24
max. current	[A]			2	2
Options and their characteristics					
Version with holding brake		ERS 170-048-40-B-N-I	ERS 170-560-40-B-N-I	ERS 170-048-40-B-D-I	ERS 170-560-40-B-D-I
ID		0310166	0310182	0310168	0310184
moment holding brake	[Nm]	5	5	5	5

ⓘ All versions are also available with protection class IP 54 upon request.

ⓘ The diagram shows the shortest possible swiveling times with max. current. The indicated break times have to be strictly observed. Please contact us for assistance with the design of your case of application and optimization of the cycle time.

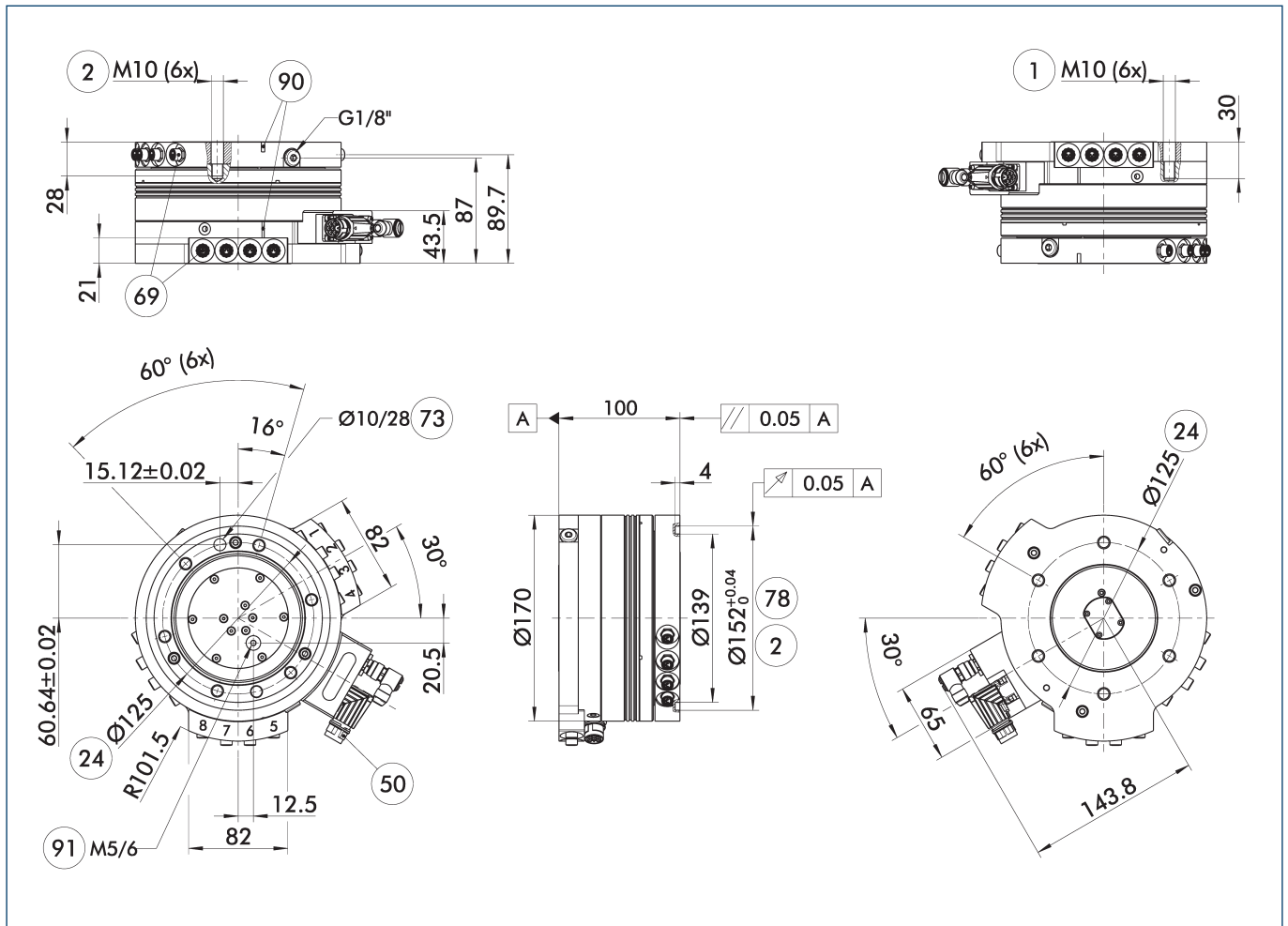## Main view for ERS without rotary feed-through

The drawing shows the basic version of the rotary unit without dimensional consideration of the options described below.

① Connection swivel unit
② Attachment connection
㉔ Bolt circle
㊆③ Fit for centering pins
㊆⑧ Fit for centering
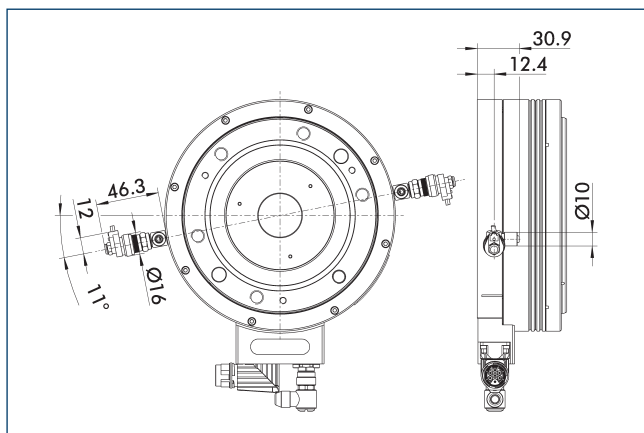⑨⓪ Zero pulse (encoder system)

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Main view for ERS with rotary feed-through

The drawing shows the rotary unit with the rotary feed-through option, without dimensional consideration of the options described below.

① Connection swivel unit
② Attachment connection
㉔ Bolt circle
㊿ Electrical connection
㊻ Connection for electric feed-through
㊾ Fit for centering pins
㊿ Fit for centering
⑨⓪ Zero pulse (encoder system)
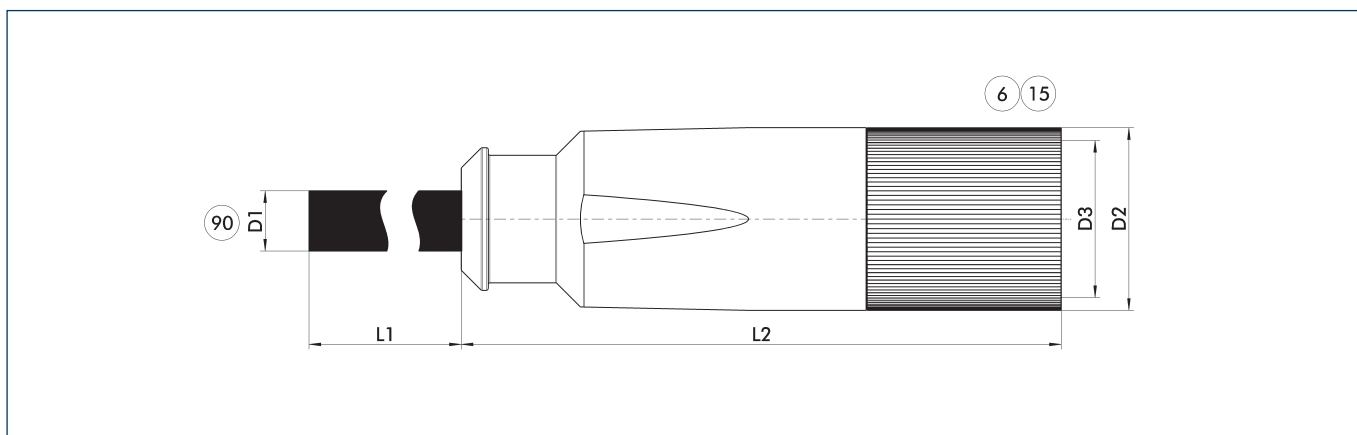⑨① Direct connection for hose-free compressed air supply

View for rotary unit with pneumatic holding brake

In addition to the two micro valves, the brake version's scope of delivery includes connection cables and a Y–distributor.

ⓘ The dimensions are identical for the ERS rotary module with and without rotary feed–through.

Power cable

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

⑥ Connection module side
⑮ Socket
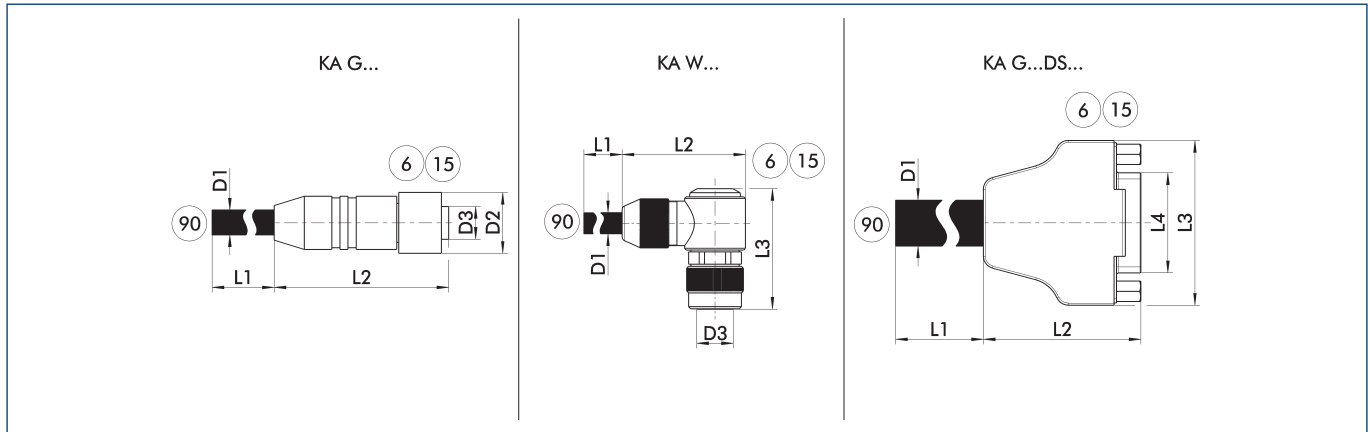
⑨⓪ Prefabricated to connect to the higher–level components

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Power cable for BOSCH Rexroth IndraDrive A/B and SCHUNK ECM – cable track–compatible						
KA GLT1706-LK-00500-B	0349861	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-B	0349862	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-B	0349863	15	8.5	71	21.2	M17
KA GLT1707-LK-02000-B	0349864	20	8.5	71	21.2	M17
Power cable for BOSCH Rexroth IndraDrive Cs – cable track–compatible						
KA GLT1706-LK-00500-C	0349882	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-C	0349883	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-C	0349884	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-C	0349885	20	8.5	71	21.2	M17
Power cable for SIEMENS Sinamics – cable track–compatible						
KA GGT1706-LK-00100-S	0349893	1	8.5	71	21.2	M17
KA GGT1706-LK-00200-S	0349894	2	8.5	71	21.2	M17
KA GGT1706-LK-00300-S	0349895	3	8.5	71	21.2	M17

ⓘ Please observe the min. bending radius for cable track–compatible cables or the max. torsion angle for torsion–compatible cables. These are generally 10 times the cable diameter or +/– 180º/m.

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Encoder cable

KA G...

KA W...

KA G...DS...

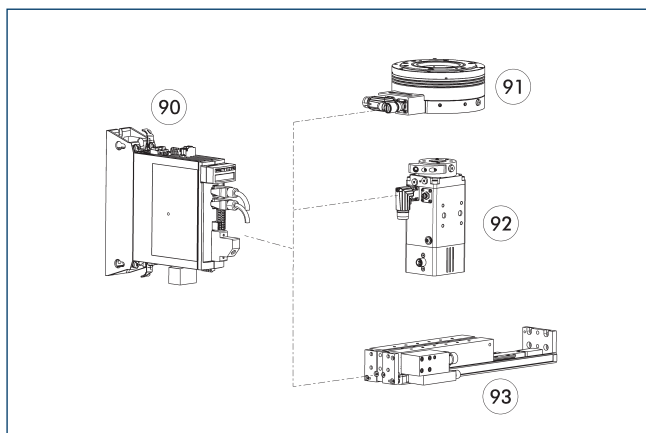|	
KA G...	encoder cable with straight plug
KA W...	encoder cable with angeled plug
KA G...DS...	Sub D encoder cable

⑥ Connection module side
⑮ Socket

⑨⓪ Prefabricated for connection to the drive controller

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

Description	ID	L1	D1	L2	L3	D3
		[m]	[mm]	[mm]	[mm]	
Encoder cable for BOSCH Rexroth IndraDrive A/B and SCHUNK ECM – cable track–compatible						
KA WWN0908-GK-00500-B	0349500	5	5.8	28.5	30	M9
KA WWN0908-GK-01000-B	0349501	10	5.8	28.5	30	M9
KA WWN0908-GK-01500-B	0349502	15	5.8	28.5	30	M9
KA WWN0908-GK-02000-B	0349503	20	5.8	28.5	30	M9
Encoder cable for BOSCH Rexroth IndraDrive Cs – cable track–compatible						
KA WWN0908-GK-00500-C	0349505	5	5.8	28.5	30	M9
KA WWN0908-GK-01000-C	0349506	10	5.8	28.5	30	M9
KA WWN0908-GK-01500-C	0349507	15	5.8	28.5	30	M9
KA WWN0908-GK-02000-C	0349508	20	5.8	28.5	30	M9
Encoder cable for SIEMENS Sinamics – cable track–compatible						
KA WGN0908-GK-00100-S	0349531	1	5.8	28.5	30	M9
KA WGN0908-GK-00200-S	0349532	2	5.8	28.5	30	M9
KA WGN0908-GK-00300-S	0349533	3	5.8	28.5	30	M9

ⓘ Please observe the min. bending radius for cable track–compatible cables or the max. torsion angle for torsion–compatible cables. These are generally 10 times the cable diameter or +/– 180°/m.
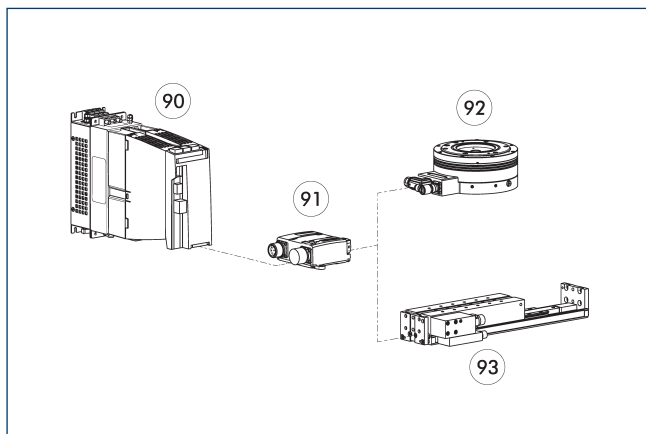
BOSCH IndraDrive Cs Drive controller

(90) Controller   (92) ERD Rotary unit
(91) ERS Rotary unit (93) ELB Compact linear module

The drive controller can be used for the rotary units ERS 560V and ERD as well as for SCHUNK linear motor axes. It is available with the communication interfaces Profibus and Multi–Ethernet (Sercos III, Profinet, EtherCat, EthernetIP).

Description	Nominal current	Maximum current
	[A]	[A]
Controller		
HCS01.1E–W0008	2.7	8

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.
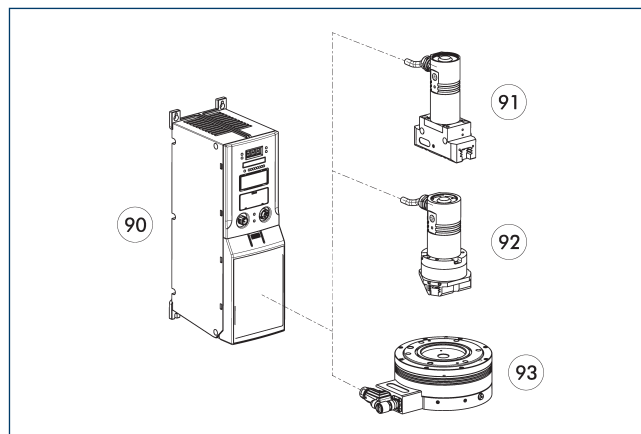
SIEMENS Sinamics Drive controller

(90) Controller   (92) ERS Rotary unit
(91) SIEMENS SME sensor module (93) ELB Compact linear module

The drive controller can be used for the rotary unit ERS 560V as well as for SCHUNK linear motor axes. It is available with the communication interfaces Profibus and Profinet.

Description	Nominal current	Maximum current
	[A]	[A]
Controller		
Sinamics S120	1.7	3.4

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

SCHUNK ECM Drive controller

(90) Controller   (92) EZN 3–finger centric gripper
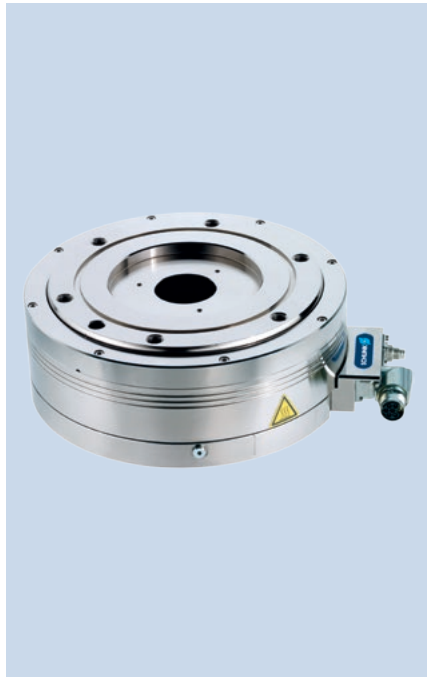(91) EGN 2–finger parallel gripper (93) ERS universal rotary module

The drive controller can be used for the rotary unit ERS 48V as well as for the grippers EGN and EZN. It is available with the communication interfaces Profibus and CAN–Bus.

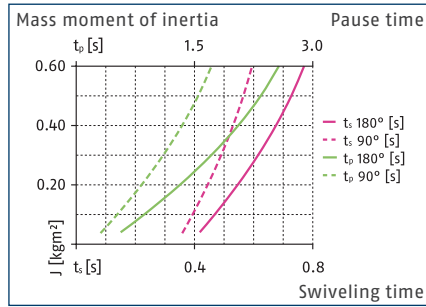| Description	Power supply (logic)	Power supply (load)
	[V]	[V]
Controller		
ECM – ERS 170	24	48

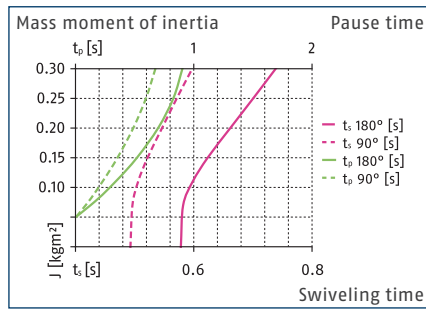ⓘ We will be happy to help you select the right controller. Please contact us for assistance.
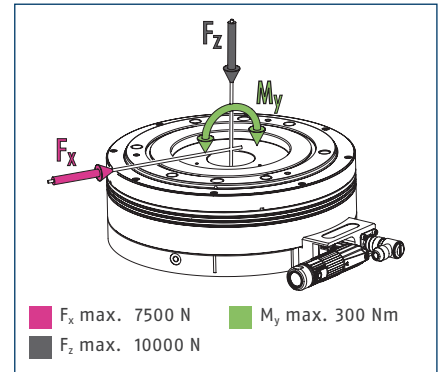
SCHUNK

ERS 210

Universal rotary unit

Swivel time diagram 560 V

Mass moment of inertia   Pause time

- t_s 180° [s]
- t_s 90° [s]
- t_p 180° [s]
- t_p 90° [s]

Swiveling time

Swivel time diagram 48 V

Mass moment of inertia   Pause time

- t_s 180° [s]
- t_s 90° [s]
- t_p 180° [s]
- t_p 90° [s]

Swiveling time

Forces and moments

F_x max. 7500 N	M_y max. 300 Nm
F_z max. 10000 N	

ⓘ Moments and forces may occur simultaneously.

Technical data

Description		ERS 210-048-40-N-N-I	ERS 210-560-40-N-N-I	ERS 210-048-40-N-D-I	ERS 210-560-40-N-D-I
ID		0310194	0310210	0310196	0310212
General operating data					
Rated/maximum torque	[Nm]	10/22	10/27	9.3/22	9.3/27
Nominal speed	[1/min]	140	600	140	250
Max. RPM	[1/min]	200	1000	200	250
Max. permissible mass moment of inertia	[kgm²]	0.3	0.6	0.3	0.6
Repeat accuracy	[°]	0.04	0.01	0.04	0.01
Axial run-out/run-out accuracy	[mm]	0.04/0.04	0.04/0.04	0.06/0.06	0.06/0.06
Weight	[kg]	7.4	7.4	10.9	10.9
min./max. ambient temperature	[°C]	5/55	5/55	5/55	5/55
Protection class IP		40	40	40	40
Electrical operating data					
Intermediate circuit voltage	[V]	48	560	48	560
Rated/maximum current	[A]	6.3/16	1.8/5.7	6.3/16	1.8/5.7
Encoder system		Encoder (incremental)	Encoder (incremental)	Encoder (incremental)	Encoder (incremental)
Output signal		TTL 5V	Sin/Cos 1Vss	TTL 5V	Sin/Cos 1Vss
Operating data of the rotary feed-through					
Number of pneumatic feed-throughs				1	1
max. operating pressure	[bar]			8	8
Number of electrical feed-throughs				8	8
Max. voltage DC	[V]			24	24
max. current	[A]			2	2
Options and their characteristics					
Version with holding brake		ERS 210-048-40-B-N-I	ERS 210-560-40-B-N-I	ERS 210-048-40-B-D-I	ERS 210-560-40-B-D-I
ID		0310198	0310214	0310200	0310216
moment holding brake	[Nm]	10	10	10	10

ⓘ All versions are also available with protection class IP 54 upon request.

ⓘ The diagram shows the shortest possible swiveling times with max. current. The indicated break times have to be strictly observed. Please contact us for assistance with the design of your case of application and optimization of the cycle time.
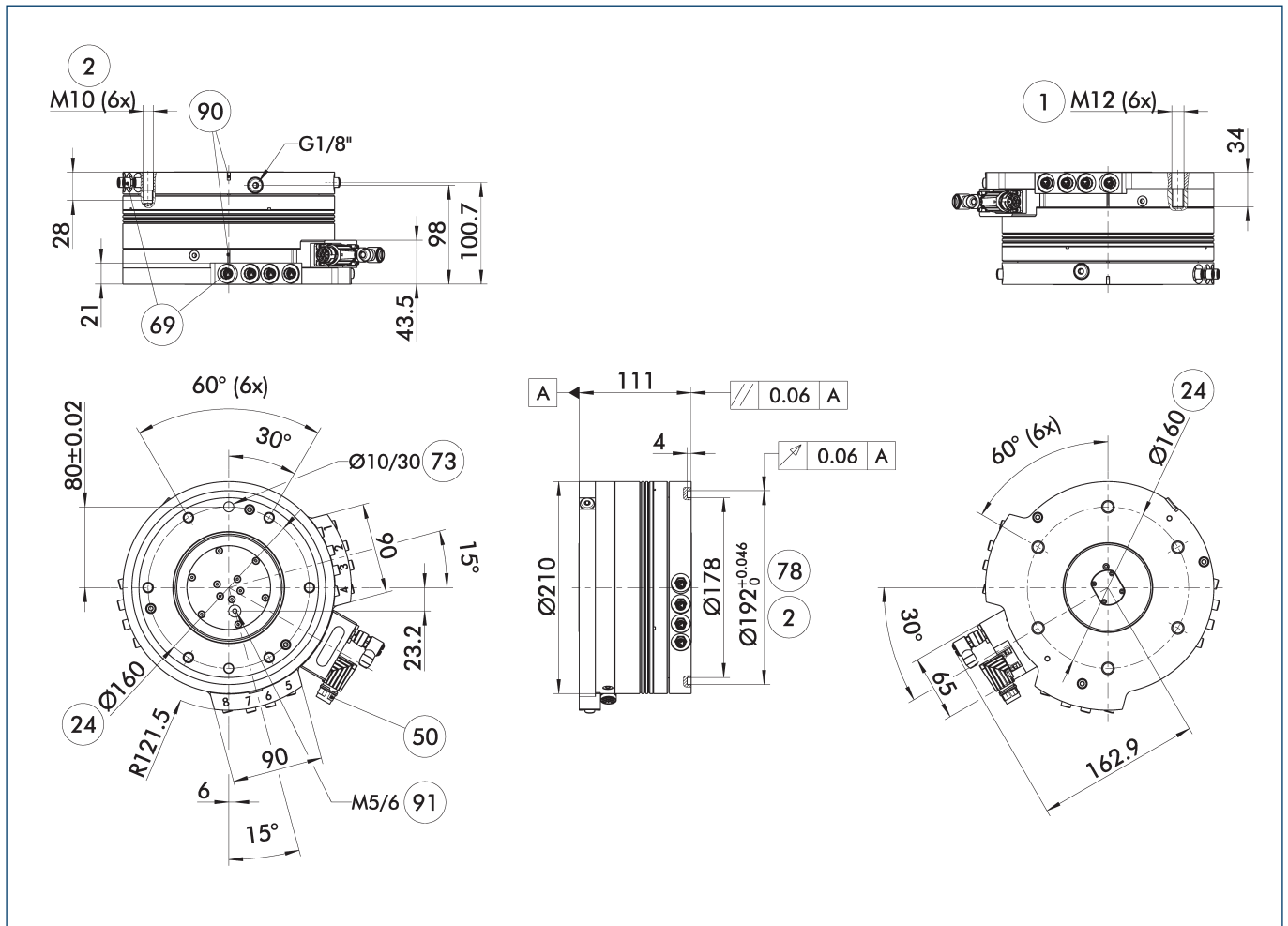
Main view for ERS without rotary feed−through

The drawing shows the basic version of the rotary unit without dimensi−onal consideration of the options described below.

① Connection swivel unit
② Attachment connection
㉔ Bolt circle

㉗③ Fit for centering pins
㉗⑧ Fit for centering
⑨⓪ Zero pulse (encoder system)

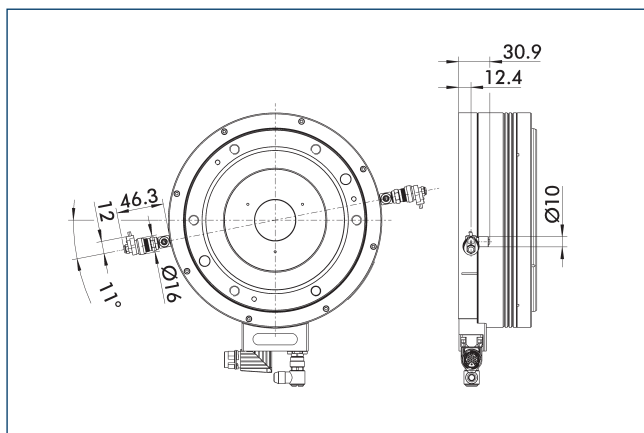SCHUNK

ERS 210
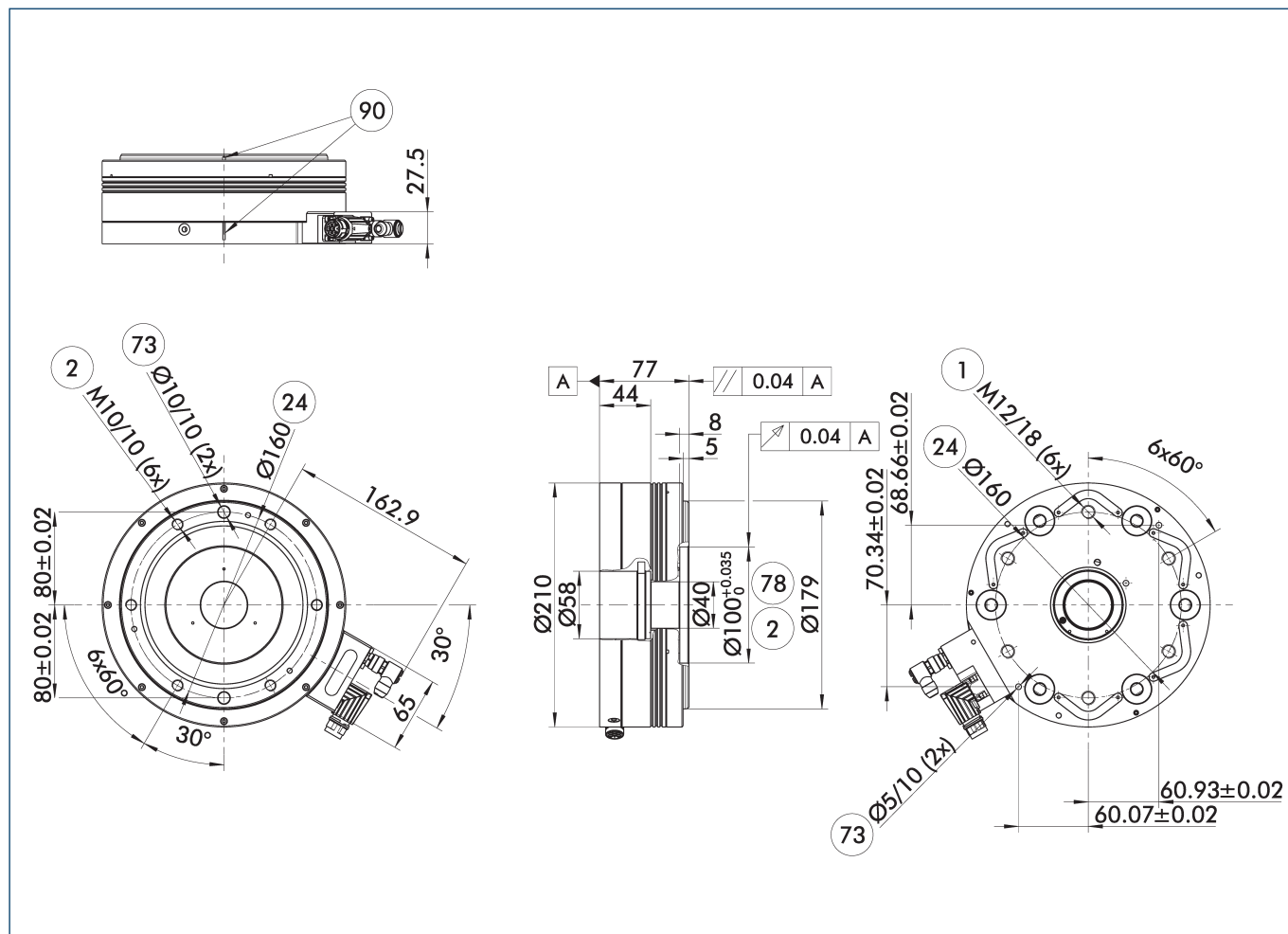
Universal rotary unit

Main view for ERS with rotary feed-through

The drawing shows the rotary unit with the rotary feed-through option, without dimensional consideration of the options described below.

① Connection swivel unit
② Attachment connection
㉔ Bolt circle
㊿ Electrical connection
㊿ 69 Connection for electric feed-through
⑦③ Fit for centering pins
⑦⑧ Fit for centering
⑨⓪ Zero pulse (encoder system)
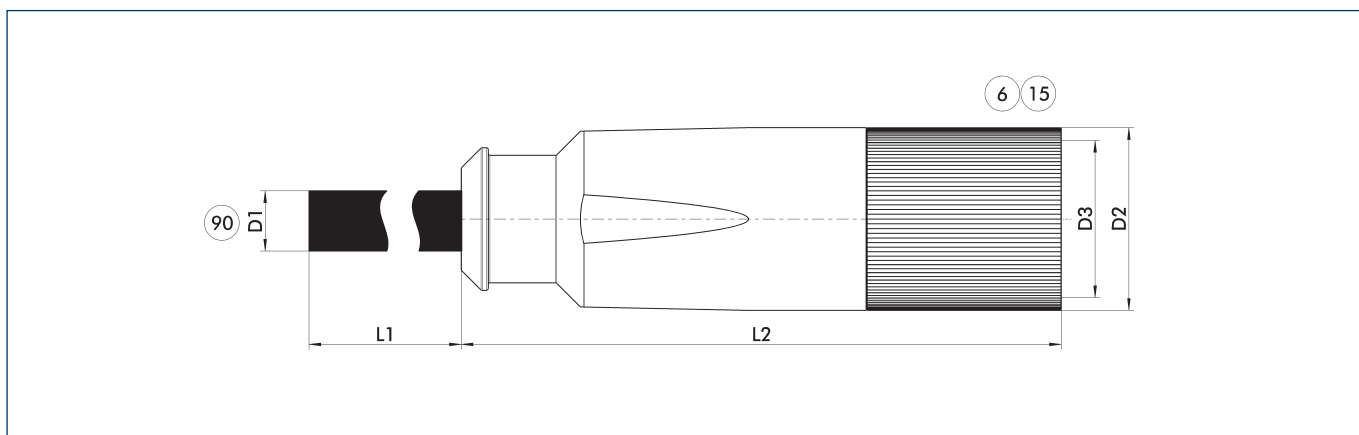⑨① Direct connection for hose-free compressed air supply

View for rotary unit with pneumatic holding brake

In addition to the two micro valves, the brake version's scope of delivery includes connection cables and a Y–distributor.

ⓘ The dimensions are identical for the ERS rotary module with and without rotary feed–through.

Power cable

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.
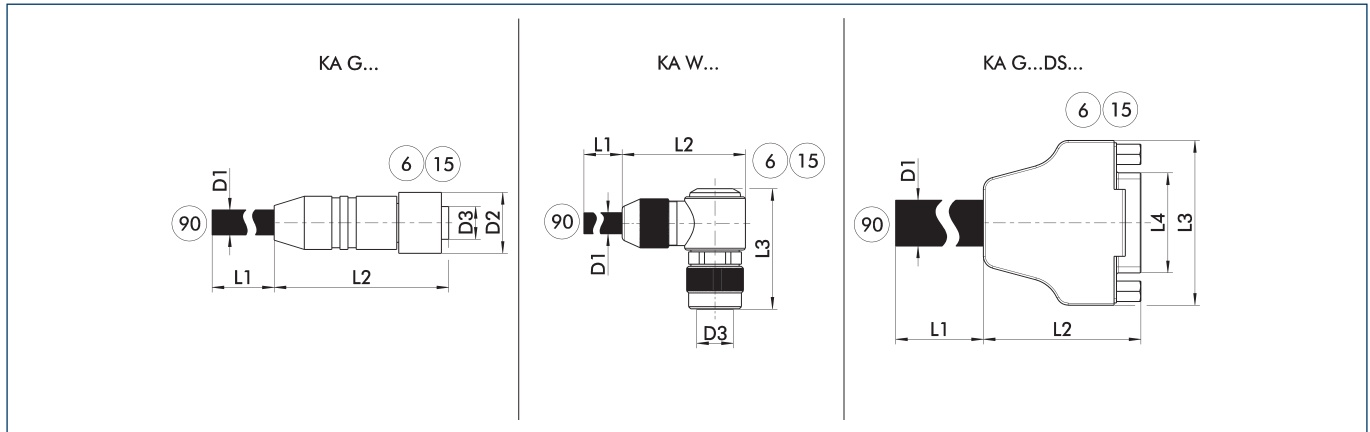
⑥ Connection module side
⑮ Socket

⑨⓪ Prefabricated to connect to the higher–level components

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Power cable for BOSCH Rexroth IndraDrive A/B and SCHUNK ECM – cable track–compatible						
KA GLT1706-LK-00500-B	0349861	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-B	0349862	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-B	0349863	15	8.5	71	21.2	M17
KA GLT1707-LK-02000-B	0349864	20	8.5	71	21.2	M17
Power cable for BOSCH Rexroth IndraDrive Cs – cable track–compatible						
KA GLT1706-LK-00500-C	0349882	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-C	0349883	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-C	0349884	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-C	0349885	20	8.5	71	21.2	M17
Power cable for SIEMENS Sinamics – cable track–compatible						
KA GGT1706-LK-00100-S	0349893	1	8.5	71	21.2	M17
KA GGT1706-LK-00200-S	0349894	2	8.5	71	21.2	M17
KA GGT1706-LK-00300-S	0349895	3	8.5	71	21.2	M17

ⓘ Please observe the min. bending radius for cable track–compatible cables or the max. torsion angle for torsion–compatible cables. These are generally 10 times the cable diameter or +/– 180º/m.

ERS 210

Universal rotary unit

Encoder cable

KA G...   encoder cable with straight plug
KA W...   encoder cable with angeled plug
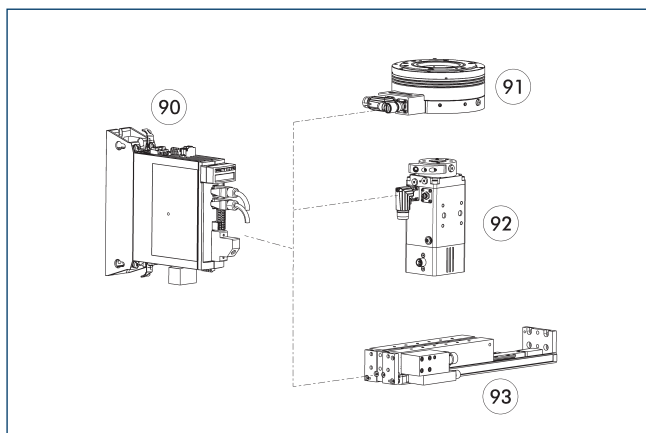KA G...DS...   Sub D encoder cable

(6) Connection module side
(15) Socket
(90) Prefabricated for connection to the drive controller

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Description	ID	L1	D1	L2	L3	D3
		[m]	[mm]	[mm]	[mm]	
Encoder cable for BOSCH Rexroth IndraDrive A/B and SCHUNK ECM – cable track–compatible						
KA WWN0908-GK-00500-B	0349500	5	5.8	28.5	30	M9
KA WWN0908-GK-01000-B	0349501	10	5.8	28.5	30	M9
KA WWN0908-GK-01500-B	0349502	15	5.8	28.5	30	M9
KA WWN0908-GK-02000-B	0349503	20	5.8	28.5	30	M9
Encoder cable for BOSCH Rexroth IndraDrive Cs – cable track–compatible						
KA WWN0908-GK-00500-C	0349505	5	5.8	28.5	30	M9
KA WWN0908-GK-01000-C	0349506	10	5.8	28.5	30	M9
KA WWN0908-GK-01500-C	0349507	15	5.8	28.5	30	M9
KA WWN0908-GK-02000-C	0349508	20	5.8	28.5	30	M9
Encoder cable for SIEMENS Sinamics – cable track–compatible						
KA WGN0908-GK-00100-S	0349531	1	5.8	28.5	30	M9
KA WGN0908-GK-00200-S	0349532	2	5.8	28.5	30	M9
KA WGN0908-GK-00300-S	0349533	3	5.8	28.5	30	M9

ⓘ Please observe the min. bending radius for cable track–compatible cables or the max. torsion angle for torsion–compatible cables. These are generally 10 times the cable diameter or +/– 180°/m.
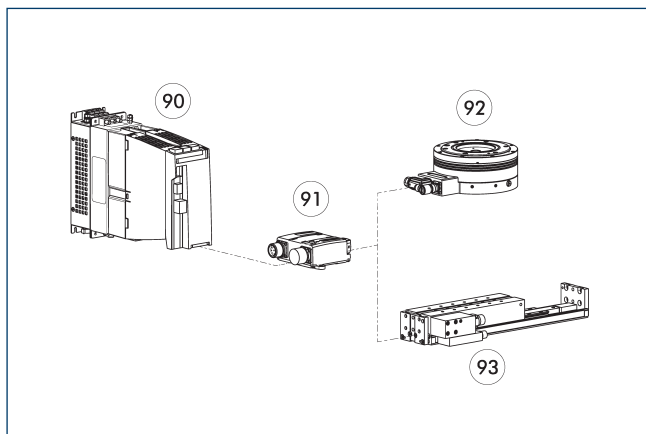
BOSCH IndraDrive Cs Drive controller

90 Controller
91 ERS Rotary unit
92 ERD Rotary unit
93 ELB Compact linear module

The drive controller can be used for the rotary units ERS 560V and ERD as well as for SCHUNK linear motor axes. It is available with the communica-tion interfaces Profibus and Multi-Ethernet (Sercos III, Profinet, EtherCat, EthernetIP).

Description	Nominal current	Maximum current
	[A]	[A]
Controller		
HCS01.1E-W0008	2.7	8

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

SIEMENS Sinamics Drive controller

90 Controller
91 SIEMENS SME sensor module
92 ERS Rotary unit
93 ELB Compact linear module

The drive controller can be used for the rotary unit ERS 560V as well as for SCHUNK linear motor axes. It is available with the communication interfaces Profibus and Profinet.

Description	Nominal current	Maximum current
	[A]	[A]
Controller		
Sinamics S120	1.7	3.4

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

SCHUNK ECM Drive controller
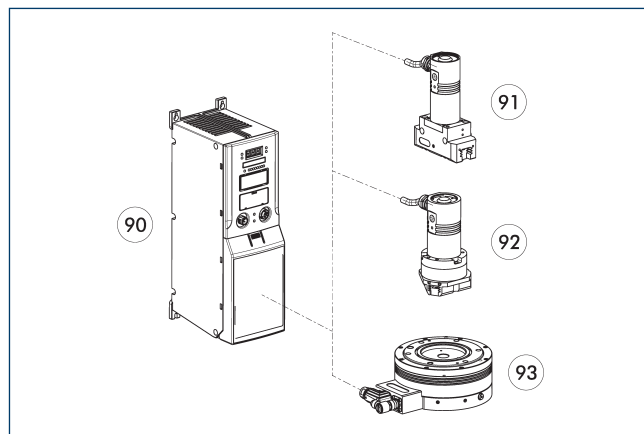
90 Controller
91 EGN 2-finger parallel gripper
92 EZN 3-finger centric gripper
93 ERS universal rotary module

The drive controller can be used for the rotary unit ERS 48V as well as for the grippers EGN and EZN. It is available with the communication interfaces Profibus and CAN-Bus.

Description	Power supply (logic)	Power supply (load)
	[V]	[V]
Controller		
ECM - ERS 210	24	48

ⓘ We will be happy to help you select the right controller. Please contact us for assistance.

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